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माल्टेड मिल्क फूड — सवेंदनात्मक मुल्यांकन विधि

Indian Standard

MALTED MILK FOOD — METHOD FOR SENSORY EVALUATION

ICS 67.100.10; 67.240

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

May 2003

Price Group 2

Food Analysis and Nutrition Sectional Committee, FAD 58

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Food Analysis and Nutrition Sectional Committee had been approved by the Food and Agriculture Division Council.

A consumer judges the quality of malted milk by its taste, colour and aroma, this standard will help in training the personnel and in establishing more uniform criteria for sensory evaluation of malted milk by consumers and manufacturers in achieving uniformity in the method of testing malted milk foods thereby facilitating interpretation and comparison of results. The specifications for malted milk food are covered in IS 1806 : 1975 'Specification for malted milk foods (*first revision*)'.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

MALTED MILK FOOD — METHOD FOR SENSORY EVALUATION

1 SCOPE

This standard prescribes conditions, technique, method and evaluating card for sensory evaluation of malted milk.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicted below:

IS No.	*Title*
5126	Glossary of general terms for sensory evaluation of foods
(Part 1) : 1969	Methodology
(Part 2) : 1969	Quality characteristics
6273	Guide for sensory evaluation of foods
(Part 1) : 1971	Optimum requirements
(Part 2) : 1971	Methods and evaluation of cards

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definitions in addition to those given in IS 5126 (Part 1) and IS 5126 (Part 2) shall apply.

3.1.1 *Abnormal Colour* — Due to the excessive caramelization of sugars or due to presence of any foreign materials.

3.1.2 *Caked* — A hardened mass of powder resulting from lactose crystallization breaks into hard chunks which are practically non-dispersible in water.

3.1.3 *Cereal (Raw)* — Flavour of wheat flour, can be detected easily while tasting the product.

3.1.4 *Churned Particles* — Masses of coalesced fat and/or coagulated protein which tend to float and adhere to the side of the container in case of reconstituted product.

3.1.5 *Dark Colour* — Due to scorched powder particles.

3.1.6 *Feed* — An off-flavour characteristic of that caused by certain feeds normally consumed by the cattle or buffalo which is reflected in milk.

3.1.7 *Floury* — Typical flavour of wheat flour.

3.1.8 *Light Colour* — This colour defect is characterized by a very light intensity which may often have a pale yellow to light brown colour.

3.1.9 *Neutralizer* — When high acid milk is neutralized with sodium carbonate group of neutralizers, product develops flavour of soap.

3.1.10 *Gluey* — Textural property indicating heavy, viscous, glue like property.

3.1.11 *Unclean* — An unpleasant odour and taste suggestive of organize decomposition products. The after-taste is unpleasant and persistent.

3.1.12 *Weedy* — A flavour characteristic of certain weeds which may be consumed by the cattle and buffaloes which is reflected in milk.

4 GENERAL CONDITIONS

The general conditions for sensory evaluation of malted milk foods shall be as given in IS 6273 (Part 1).

5 PANELISTS

5.1 Selection

Persons with normal sensitivity for taste and odour should be selected. They should have ability to detect small differences between paired samples with minor flavour, colour or textural differences. They should be able to recognize the primary stimuli like sweet, sour, salty and bitter. Selection among the available panelists should be based on their significant capacity to distinguish quality variations and other attributes. Those who dislike malted milk or any similar products should be excluded from the panel.

5.2 Training

5.2.1 *Preparation of Malted Milk Samples for Training*

A control sample of fresh malted milk (prepared under standard conditions) representing desirable characteristic like taste, aroma, texture and colour should be served along with the samples having one or more of the following defects in different intensities.

5.2.1.1 *Abnormal colour*

Prepare small lots of malted milk having dark or light colour by using the malted milk powder by adding some caramel to give dark colour.

5.2.1.2 *Bitter*

Use a little of rancid fat for the preparation of malted milk samples.

5.2.1.3 *Cereal (raw)*

Add small quantity of raw cereal wheat flour to the product and prepare the samples.

5.2.1.4 *Pasty*

Keep malted milk powder liquid to milk ratio more than optimum.

5.2.2 *Procedure for Training*

5.2.2.1 The panelists should be familiarized with all the desirable characteristics of fresh malted milk. They should be trained to distinguish between normal and abnormal colour, good and not-good taste and proper body and texture and defective body and texture.

5.2.2.2 A series of 20 judgments should be obtained from each prospective panelist utilizing a pair of samples with known differences. To compensate for the known variations from day-to-day a qualifying test is given for a 3-day period. Those who make an acceptable (75 percent correct score should be chosen).

5.2.2.3 The panelists should be checked once in three months for their consistency and acuity.

5.3 Number of Panelists

Five to seven panelists should be employed in the evaluation to arrive at consistent and statistically valid results. At least 10 judgments should be taken.

6 SAMPLING, PREPARATION AND PRESENTATION

6.1 Sampling

A representative sample should be drawn from the lot. Precaution should be taken to avoid an extraneous contamination in drawing, handling and presentation of samples.

6.2 Preparation of Samples

Malted milk should be presented in suitable bottles for evaluation. They may be reconstituted to see any visible suspended impurities.

6.3 Amount of Each Sample

A sample of 50 ml (reconstituted) or 30 g powder should be sufficient.

6.4 Number of Samples

Number of samples in one session should not exceed five.

6.5 Coding

Coding of samples should be done as recommended under **7** of IS 6273 (Part 1).

7 PROCEDURE

7.1 Technique of Evaluation

7.1.1 *Malted Milk Powder*

Evaluate the package for possible damage, or soiling. To begin with, note the colour and appearance of the sample. Examine if any visible dirt/foreign matter is present. Take the sample and pass it slowly under the nose to record its aroma. Observe the sample for lumps. Finally take enough of the sample into the mouth and chew it up to a semi-solid state. Observe the sample flavour and textural characteristics as it is being masticated. Note if the sample leaves any after-taste.

7.1.2 *Reconstituted Malted Milk*

The method for reconstitution has not been prescribed. The sample should be reconstituted by dissolving in luke warm water in the ratio 14 g powder to 100 ml water.

Keep the reconstituted milk in a beaker for 10 min, look for the foreign impurities, if any either suspended or settled at the bottom. Take a sip of the sample and roll it in the mouth noting the taste and odour sensations. Note if the sample leaves any after-taste.

7.2 Method

Follow composite scoring method as described in **4.2.8** of IS 6273 (Part 2).

7.3 Evaluation Card

Use the evaluation card given in Table 1 and Table 2 for recording observations for reconstituted malted milk and malted milk powder respectively. Calculate the final score by deducting score under Section B from score under Section A.

7.4 Grading

After computation of data recorded in Table 1 by the panelists the following grades should be given to the sample evaluated:

Total Score	*Grade*
90 or more	Excellent
80-89	Good
70-79	Fair
69 or less	Poor

Table 1 Evaluation Card for Reconstituted Malted Milk

(*Clauses* 7.3 *and* 7.4)

Name ______________________________ Date ______________

Batch or code No. ______________________________ Time ______________

Section A

Assign score for each sample for different characteristics. First go through Section B.

Sl No.	Characteristics	Maximum Score	Sample Score
i)	Taste	40	
ii)	Aroma	30	
iii)	Body and texture	20	
iv)	Colour and appearance	10	

Section B

Indicate, if any, the degree of defects such as the following. Encircle the one applicable and deduct from the appropriate attribute.

Sl No.	Characteristics	Defects	Degree of Defects		
			Slight	Definite	Pronounced
i)	Flavour (both in dry and reconstituted form)	Bitter, acidic, astringent harsh, salty, sour, stale oxidized, rancid bland, smoky, yeasty	3	5	9
ii)	Body and texture (in dry form)	Slimy, thin fibrous, floury, pasty, gluey	1	4	7
iii)	Colour and appearance (in dry form)	Too dark, too light abnormal	1	2	5
	(in reconstituted form)	Too dark, too light abnormal undispersed lumps			
iv)	Mouthfeel (in reconstituted form)		2	4	7
v)	Sediment (in reconstituted form)		1	2	3

Table 2 Evaluation Card for Reconstituted Malted Milk Powder

(*Clause* 7.3)

Name ______________________________ Date ______________

Batch or code No. ______________________________ Time ______________

Section A

Assign score for each sample for different characteristics, first go through Section B.

Sl No.	Characteristics	Maximum Score	Sample Score
i)	Flavour	65	
ii)	Appearance:		
	a) Dry product	15	
	b) Reconstituted product	15	
iii)	Colour	5	

Flavour impression obtained on the dry product as such should be correlated with that of reconstituted product before giving the flavour score.

Reconstitution rate : 16-17 g powder in 100 ml milk.

Table 2 — *Concluded*

Section B

Indicate, if any, the degree of defects such as the following. Encircle the one applicable and deduct from the appropriate attribute.

Sl No.	Characteristics	Defects	Degree of Defects		
			Slight	Definite	Pronounced
i)	Flavour	Acid	9	14	21
		Astringent	9	14	21
		Bitter	9	14	21
		Cooked	2	4	8
		Feed	4	8	14
		Flat	3	6	19
		Foreign	9	14	21
		Metallic	8	12	19
		Neutralizer	9	14	21
		Oxidized	9	14	21
		Rancid	9	14	21
		Salty	4	8	14
		Scorched	6	10	18
		Stale	9	14	21
		Unclean	6	10	18
		Weedy	8	12	19
ii)	Appearance				
	Dry Product				
		Caked	2	5	10
		Dark particles	2	5	10
		Extraneous matter	3	6	11
		Lumpy	1	2	5
	Reconstituted Product				
		Burned particles	2	4	10
		Dark particles	2	4	10
		Grainy	2	4	10
		Undispersed lumps	2	4	10
iii)	Colour	Too dark	1	2	4
		Too light	1	2	3

8 STATISTICAL EVALUATION OF RESULTS

For the purpose of statistical analysis of data, one of the methods recommended in **4.2** and **8.4** of IS 6273 (Part 2) should be adopted.

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